



Updates from the American Samoa NTHMP

By Aukusitino Steffany, Program Liaison,
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IN THIS ISSUE:

Updates from the American Samoa NTHMP 1

NCEI Natural Hazards Image Database Photo Feature 3

50TH Anniversary of the All Hazards NOAA Weather Radio 4

City of Bainbridge Island, WA Tsunami Maritime Response and Mitigation Strategy 5

A Look Inside the NTWC in Palmer, AK 6

Preparing for a Landslide Induced Tsunami 7

NTHMP Related Events 8

In January 2025, the American Samoa Tsunami Team travelled to the Manu’a Islands of American Samoa to conduct outreach activities and sign assessments, and to perform siren maintenance and repairs. The Territory of American Samoa is made up of five volcanic islands (Tutuila, Aunu’u, Ofu, Olosega and Ta’u). The three islands in the Manu’a Group are Ofu, Olosega, and Ta’u, which are located about seventy miles east of Tutuila (main Island of American Samoa).



Group photo in front of the Faleasao Elementary School sign

Outreach activities for the Manu’a Group provided an excellent opportunity for the American Samoa Tsunami Team to engage with teachers and students as well as the young men in the village. The goal of these outreach activities included enhancing tsunami awareness,



Siren maintenance and repair on Ta’u Island

revisiting evacuation plans, and repairing the six sirens that have been inoperable since early 2024. The American Samoa Tsunami Team arrived on Ta’u Island and promptly began outreach at the Faleasao Elementary School. This school is located along the coastlines on the Island of Ta’u. Following the outreach at Faleasao Elementary School and the completion of school siren repairs, the American Samoa Tsunami Team proceeded to conduct assessment and repairs for the last three sirens. There are a total of four sirens on the island of Ta’u, located in the villages of Faleasao, Fitiuta, Luma, and Siufaga. In addition, the team conducted an assessment of all tsunami signs on Ta’u Island. These activities were completed within two days, and the team traveled by boat to the Island of Ofu. While Ta’u Island is

the largest Manu’a Group, the Islands of Ofu and Olosega are connected by a bridge.

(Continues on page 2)

TsuInfo Alert

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NATIONAL TSUNAMI HAZARD MITIGATION PROGRAM LIBRARY CATALOG:

<http://d92019.eos-intl.net/D92019/OPAC/Index.aspx>

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(Continued from page 1)

Two outreach activities were conducted for the Islands of Ofu and Olosega. The first took place on Olosega Island for the Olosega "Aumaga." The Aumaga (i.e. the young men) play a crucial role in the village as they are considered the village's first responders who are responsible for the protection and safety of all those reside in the village. The team then visited the Olosega Elementary School, which serves as the only school for students residing in Ofu and



Group photo in front of the Olosega school sign



Group photo in front of the school sign

Olosega. The Tsunami Team also had the opportunity to assess the evacuation routes for the Islands of Ofu and Olosega. Tsunami Team completed sign assessments for Ofu and Olosega Islands, and repairs for the siren located on the Island of Ofu.

NCEI NATURAL HAZARDS IMAGE DATABASE

NCEI Natural Hazards Image Database Photo Feature*

*One photo from the NCEI Natural Hazards Image Database will be included in each future issue of TsunInfo Alert

EVENT: 2022 Hunga-Tonga Hunga-Ha'apai, Tonga Volcano Eruption and Tsunami — On January 15, 2022, the eruption of the Hunga Tonga - Hunga Ha'apai (HTHH) volcano generated a significant local tsunami that was the most damaging tsunami in history for Tonga. This eruption generated a massive atmospheric pressure wave, and a series of small tsunamis observed around the world.



PHOTO DETAILS: All seven resorts along the northwestern tip of Tongatapu, including the Vakaloa Beach Resort (pictured), were destroyed by the tsunami generated by the Hunga Tonga-Hunga Ha'apai volcanic eruption. More images from this event are available in the [NCEI Natural Hazards Image Database](#). Any parties interested in contributing photographs to this free and public resource may contact NCEI for submission requirements at haz.info@noaa.gov or Lindsey Wright at lindsey.m.wright@noaa.gov. Image courtesy of Tonga Geological Services, contributed by International Tsunami Information Center.

Link to image: <https://www.ngdc.noaa.gov/hazardimages/#!/tsunami/286/image/2156/>

Link to NCEI Natural Hazards Image Database: <https://www.ngdc.noaa.gov/hazardimages/#!/>

NTHMP PARTNER UPDATES

50TH Anniversary of the All Hazards NOAA Weather Radio

By Bruce Jones, Midland Radio Corporation

2025 marks the fiftieth anniversary of President Gerald Ford designating All Hazards NOAA Weather Radio “America’s Official Federal Warning System”. In the aftermath of the 1974 Super Tornado Outbreak, it became obvious our nation needed an official, automatic alerting system that would act like an “indoor tornado siren”, instantly delivering official life-saving warnings directly into homes, schools and businesses at any hour of the day or night.

Today the NOAA Weather Radio (NWR) Network comprises 1,036 transmitters in all fifty states and five US territories, delivering National Weather Service forecasts, data, and warnings. Non-weather emergencies are broadcasted upon request of the local emergency manager, or the National Tsunami Warning Center (NTWC). Because the system is paid for and operated by the federal government, NWR is the most inexpensive way for NTWC and emergency managers to alert citizens to tsunami dangers, and the broadcast is completely free for citizens who purchase, or are supplied with, an inexpensive receiver. Emergency managers can tap FEMA Hazard Mitigation Grant Program funds to cover 75% of the cost of weather radios to distribute to their citizens.



Bus stop in Utulei, American Samoa. Following the 2009 tsunami, the government procured and distributed Public Alert-certified weather radios to provide instant alerting to homes, schools, and businesses. Photo credit: Bruce Jones

All Hazards NOAA Weather Radios automatically receive Tsunami Watch, Tsunami Warning, Evacuation Immediate, and Shelter-in-Place alerts. By the strict specifications of the Consumer Technology Association, a Public Alert-certified weather radio must be programmable for its specific area, have a minimum 77 decibel alert tone and alert indicator lights, battery back-up in case of power failure, and the ability to trigger optional strobes and pillow shakers for the deaf and hard of hearing. This makes NWR an outstanding way for vulnerable coastal residents to be alerted, even when power and cell phone systems are down.

Why have a weather radio when you have a cell phone? The Voyager 1 spacecraft, launched in 1977, is now 15 billion miles from Earth, but we can communicate with it...via radio. Radio waves travel much farther than cell phone signals and most NWR antennas are placed on strong guy-wired broadcast towers. NOAA Weather Radio survives better and communicates farther - to an unlimited number of listeners.

I encourage every seaside home, school, and business in America and its territories to have multiple, redundant ways to receive life-saving warnings, and nothing’s more reliable than the official “Voice of the National Weather Service”: NOAA Weather Radio. These devices are affordable and reliable, and they have a fifty-year history of saving lives.

NTHMP PARTNER UPDATES

A Tsunami Maritime Response and Mitigation Strategy for the City of Bainbridge Island's Eagle Harbor is Complete!

By Ethan Weller, Washington Emergency Management Division

In December, the Washington Emergency Management Division published the state's fifth Tsunami Maritime Response and Mitigation Strategy in Washington for the City of Bainbridge Island's Eagle Harbor. Eagle Harbor is a vital maritime and community hub for Bainbridge Island, which is located west of Seattle across the Puget Sound. It is home to one of the many ferry stops within the Puget Sound, which allows visitors and commuters to gain passage to Seattle on a regular basis. This joint effort was a collaboration between the Washington Emergency Management Division, Washington Geological Survey, the City of Bainbridge Island's Emergency Management Coordinator, Anne LeSage, and the Lead Marine Officer with the Police Department, Jonathan Bingham.

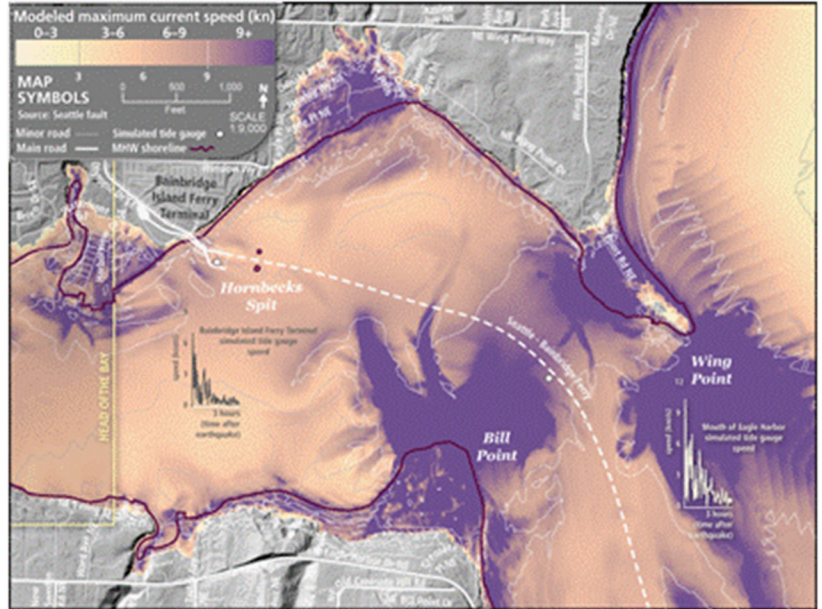


Figure 1. Maximum current speeds at the mouth of Eagle Harbor in a Seattle Fault earthquake-generated tsunami scenario. Dark purple speeds represent current speeds exceeding 9 knots over background currents which can cause complete destruction of existing maritime infrastructure.

This strategy is the first that evaluated the maximum inundation, current speeds (see Figure 1), and minimum water depths (drawdown) from a tsunami generated by an earthquake from the nearby Seattle fault zone, which would bring

strong currents and significant inundation to the Island in less than ten minutes. The strategy also evaluated discussions surrounding the Cascadia Subduction Zone earthquake and tsunami, which would take approximately two and a half hours to reach the shores of Bainbridge Island. In addition to the snapshots of the impacts, water level changes and current speeds are also evaluated over time (see Figure 2).

Recent upgrades to the City Dock, which incorporated sea-level rise into their construction, led this strategy to be the first in Washington that labeled some mitigation actions as “completed”. The construction, which included pilings built to 19 feet above mean high water, flexible, unrestricted piling connections, and sturdy, lightweight piling floats, improves the dock's resilience to the impacts of a tsunami.

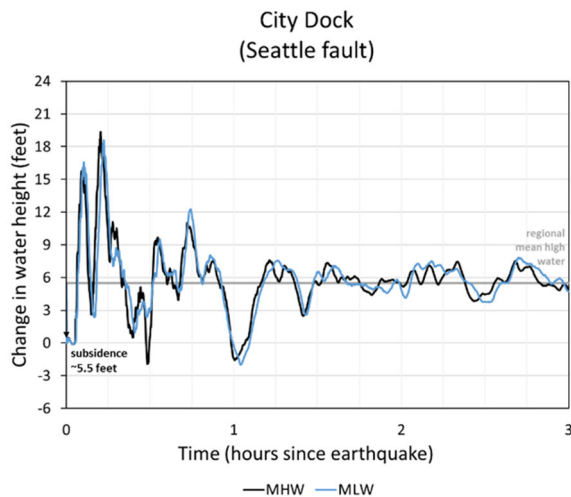


Figure 2. Water-level changes over time for a Seattle Fault earthquake-generated tsunami scenario.

(Continues on page 6)

NTHMP PARTNER UPDATES

A Tsunami Maritime Response and Mitigation Strategy for the City of Bainbridge Island's Eagle Harbor is Complete!

By Ethan Weller, Washington Emergency Management Division

(Continued from page 5)

The work in the strategy also highlighted the Bainbridge Prepares Partnership, which is a collaboration between the City of Bainbridge Island, the local Fire Department, and the community non-profit group Bainbridge Prepares. Most notably, the Bainbridge Prepares Flotilla Group shared how they mobilize private vessels to support the community during emergencies, particularly when conventional transportation routes are disrupted.

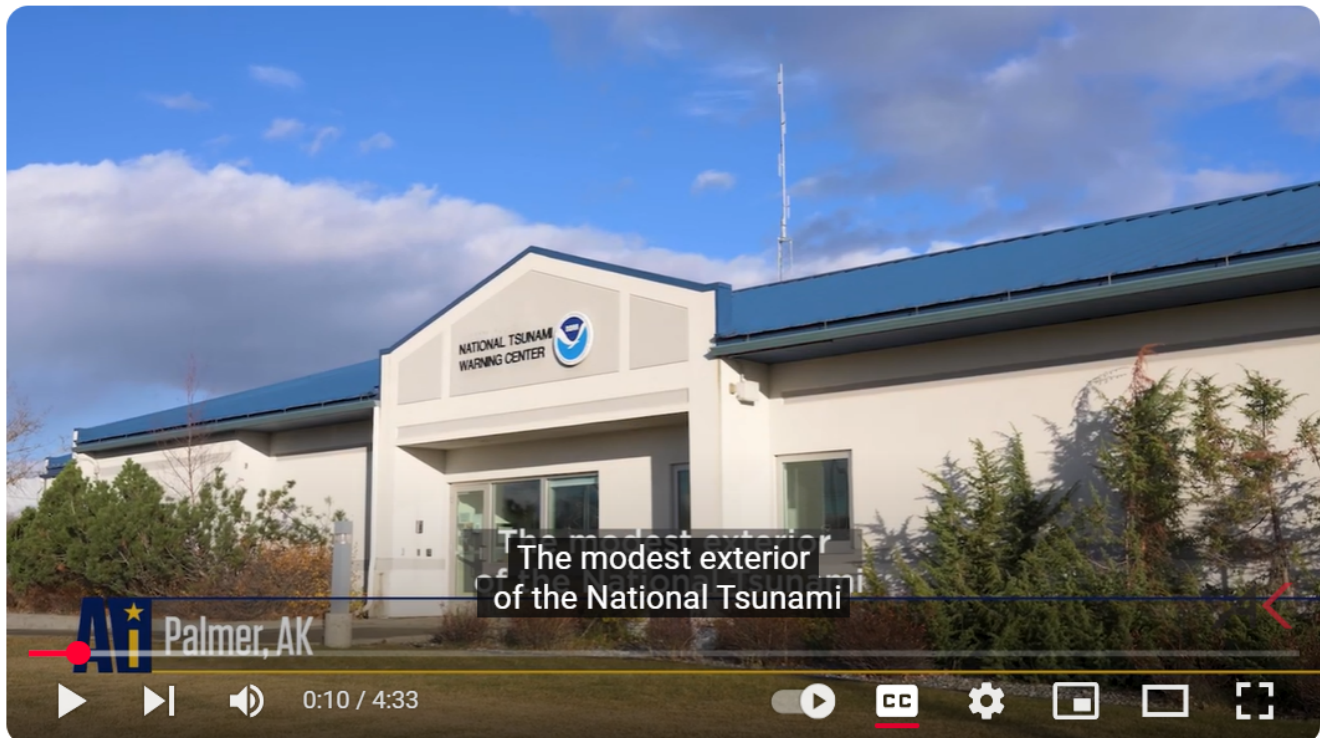
The completion of the strategy only adds to the impressive work that the City of Bainbridge Island is taking to become more resilient to tsunami impacts. Within the past year, they became the first community in the Puget Sound to complete the TsunamiReady® process and have been working diligently to install tsunami evacuation signage and conduct outreach within the community as part of their efforts.

Other strategies completed for Washington include the Port of Bellingham, Westport Marina, Port of Anacortes, and the Port of Neah Bay. You can find all published strategies at mil.wa.gov/tsunami.

The site of the next strategy is the Port of Port Angeles and will be a collaboration with representatives of the port, Clallam County Emergency Management, and the U.S. Coast Guard.

VIDEO: A Look Inside the National Tsunami Warning Center in Palmer

By Alaska Public Media



Link to video: <https://www.youtube.com/watch?v=IBC0Bo5RkCM>

NTHMP PARTNER UPDATES

Preparing for a Landslide Induced Tsunami

By Rhody Today, The University of Rhode Island news

KINGSTON, R.I. – Jan. 29, 2025 – On Jan. 27, an earthquake measuring 3.8 in magnitude shook parts of New England. Its epicenter was near Portsmouth, New Hampshire, though the tremor was felt in Maine, Massachusetts, and Rhode Island.

While the eastern United States doesn't sit along major tectonic plate fault lines like the West Coast, earthquakes can still happen here. The last tremor along the Eastern Seaboard was less than a year ago, on April 5, when a 4.8 magnitude earthquake was felt in New Jersey.

These earthquakes weren't large enough to trigger a tsunami, which typically requires a more significant seismic event, such as a magnitude 7 earthquake. Nevertheless, Stephan Grilli, the former chair of ocean engineering, in the University of Rhode Island's College of Engineering, points out that just because the East Coast doesn't regularly see earthquakes that size doesn't mean it eliminates the risk for one.



Stephan Grilli, former chair of ocean engineering, in the University of Rhode Island's College of Engineering (URI photo)

In fact, the East Coast is regularly hit by miniscule tsunamis – about 20 a year – many of which go unnoticed, said Grilli. While earthquakes are commonly associated with tsunamis, Grilli explains that seismic activity can cause tsunamis, along with underwater landslides.

Sediment from the Hudson River or Chesapeake Bay can accumulate offshore. If that sediment is nudged off the eastern part of the continental shelf into the abyss of the Atlantic Ocean, it has the potential to trigger a tsunami.

“There is no warning system in place for landslide-induced tsunamis right now,” said Grilli. “This is one very, very dangerous potential source of tsunamis on the East Coast.”

Grilli and a colleague who's an emergency manager in Massachusetts is funded by the National Tsunami Hazard Mitigation Program. The program splits the U.S. into several regions, with the East Coast being one. The program focuses on researching the potential impacts of a major tsunami and how to mitigate the risks in the 14 states from Florida to Maine most vulnerable to such an event, which includes Rhode Island.

Grilli and his colleague are not tasked with predicting tsunamis and where they'll happen. It's impossible to predict when one will form. Instead, their job deals with assessing outcomes and readiness, such as inundation and the potential economic impact and how cities along the Eastern Seaboard can improve preparedness.

“Every year, the West Coast could face up to \$200 million in damages if a major tsunami were to hit. On the East Coast it's \$160 million,” said Grilli.

(Continues on page 8)

NTHMP PARTNER UPDATES & TSUNAMI EVENTS

Preparing for a Landslide Induced Tsunami

By Rhody Today, The University of Rhode Island news

(Continued from page 7)

A major earthquake, like the one off the coast of Puerto Rico in 2020, that registered as a 6.4 magnitude could generate a tsunami that reaches New England in about seven hours.

“In the deep ocean, a tsunami moves at about the speed of a jetliner but only grows about a foot high,” said Grilli. “When it gets to the shelf, it slows down, but as a result, it grows in height.”

Most cities on the East Coast have an emergency plan for more common natural disasters like nor’easters or hurricanes. Though less frequent, major tsunamis could have far more devastating consequences. Grilli notes that the rarity of tsunamis on the East Coast only helps underscore the importance of planning and preparing.

As part of the National Tsunami Hazard Mitigation Program Grilli has examined strategies implemented on the West Coast to help cities prepare for the worst-case scenario. Some strategies included establishing alert systems, creating designated evacuation routes and areas, reinforcing critical infrastructure like power plants, and even relocating vulnerable buildings.

“In Oregon, they realized that their main high school was in an exposed place right in a tsunami zone. They did crowdfunding and got \$100 million to move the school to the top of a hill,” said Grilli.

For those on the East Coast, Grilli advises taking simple yet effective precautions, such as reviewing flood maps to assess potential risks, creating an emergency plan, and ensuring that evacuation routes lead to higher ground.

Link to original article: <https://www.uri.edu/news/2025/01/preparing-for-a-landslide-induced-tsunami/>

UPCOMING NTHMP & RELATED EVENTS

- ◆ March 20, 2025—CARIBE WAVE 25 Tsunami Exercise <http://caribewave.info>
Register at: <https://tsunamizone.org>
- ◆ April 14-18, 2025—Seismological Society of America Meeting (Baltimore, MD)
<https://meetings.seismosoc.org/>
- ◆ April 15-17, 2025—2025 Partners in Emergency Preparedness Conference (Tacoma, WA)
<https://piepc.org/2025-conference/>
- ◆ May 6, 2025—PACIFEX 24 Tsunami Exercise (Pacific US and Canada)
<https://tsunami.gov/?page=exercises>
- ◆ May 19-23, 2025 (Tentatively planned)—NTHMP 2025 Annual Meeting (Anchorage, AK)
<https://www.weather.gov/nthmp/>



Exercise
PACIFEX24

